Paper No. 25

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte HANSPETER HERMANN

Appeal No. 1998-0668
Application 08/036,650[1]

ON BRIEF

Before THOMAS, BARRETT, and RUGGIERO, Administrative Patent Judges.

BARRETT, Administrative Patent Judge.

DECISION ON APPEAL

[1] Application for patent filed March 24, 1993, entitled "Multicolour Printing Process, Especially A Multicolour Grid Screen Printing Process For Textile Substrates."

This is a decision on appeal under 35 U.S.C. § 134 from the final rejection of claims 20-36.

We affirm-in-part.

BACKGROUND

The disclosed invention is directed to a process for transferring a multicolored image of an original onto a textile substrate by printing as may be understood from claim 20, reproduced below.

> 20. A process for transferring a multicolored image of any original onto a textile substrate by printing comprising the steps:
>
> (a) printing a color atlas on a test substrate, which test substrate has the same composition as the textile substrate, wherein the color atlas comprises color charts that are composed of color fields wherein specified volumes of up to three selected printing inks are printed one on top of the other under specified printing conditions, which selected printing inks are selected from a set of printing inks comprising at least three printing inks;
>
> (b) dividing said multicolored image of the original into image areas;
>
> (c) determining a color impression for each of the image areas of the original;
>
> (d) determining the relative volumes of each of the selected printing inks required to reproduce the color impression of each image area by comparing the color impression with the color atlas;

(e) establishing an area on the textile substrate which corresponds to each of the image areas of the original;

(f) producing a copy of the multicolored image of the original on the textile substrate by printing the area of the textile substrate corresponding to each image area of the original with the relative volumes of the selected printing inks determined in step (d), under printing conditions that are the same as the specified printing conditions of step (a), in order to reproduce the color field corresponding to the color impression of each image area on the area of the textile substrate corresponding to the image area of the original.

The Examiner relies on the admitted prior art (APA) that it was known to print multicolor images on a textile substrate (specification, pp. 1-2) and to print and control the image to a printing device (figures 1 and 2 and corresponding text). The Examiner also relies on the following patents:

Phillips	4,629,428	December 16, 1986
Hermann et al. (Hermann)	5,255,350 (filed February 22, 1991)	October 19, 1993

Claim 20 stands rejected under 35 U.S.C. § 102(e) as being anticipated by Hermann.

Claims 21-36 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hermann and the APA.

Claims 20-36 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Phillips and the APA.

We refer to the Final Rejection (Paper No. 18) (pages referred to as "FR__") and the Examiner's Answer (Paper No. 24) (pages referred to as "EA__") for a statement of the Examiner's position and to the Appeal Brief (Paper No. 23) (pages referred to as "Br__") for a statement of Appellant's arguments thereagainst.

OPINION

Anticipation

"Anticipation is established only when a single prior art reference discloses, expressly or under principles of inherency, each and every element of a claimed invention." RCA Corp. v. Applied Digital Data Systems, Inc., 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir. 1984).

Hermann corresponds to EP-A-0 446 168 discussed in the specification (para. bridging pp. 6-7). Hermann discloses a process for computing dyeing and printing recipes for color matching to a reference color printed on a substrate. The substrate may be a textile (col. 5, lines 54-68). The process utilizes a three-dimensional color space, FTa*b*,

where a* and b* are values of the CIELab color coordinate system and FT is a depth of shade value which defines points of equal color strength. Figure 1 shows a depth of shade plane of the FTa*b* color space with a segmentation into triangular levels by the calibration data of different dyes, in which points P1 to P8 are corner points and define dye data. Points on a line between two points, e.g., between P1 and P7, represent a mixture of the dyes corresponding to P1 and P7, and points within the triangular segment represent a mixture of three dyes defined by the corner points, e.g., the colors at the u or + points in figure 3 are defined by mixtures of P1, P6, and P7. The sum of percentages of dye must be 100 (see Tables 1-3 for percentages of points of the segment in figure 3). The amount of dye for different depths of shade FT are known (col. 8). The coordinates in the FTa*b* color space are determined from the reference color on a substrate (col. 6, lines 21-25) and from the coordinates a*, b*, and FT the relative amounts in g of dye per kg of print paste can be computed (col. 8, lines 55-63).

For the sake of argument, we assume that the dye in Hermann could be called an ink because Hermann discusses a printing recipe.

Appellant argues that Hermann does not relate to a process for transferring a multicolored image onto a textile substrate and that Hermann is strictly limited to a method for producing a single dye color (Br4).

The statement of the rejection does not state where Hermann discloses printing a multicolored image. The Examiner's response to Appellant's argument alleges (EA10): "**Hermann** teaches printing multicolored images on a substrate by mixing different dyes (columns 3 and 4)."

Hermann teaches mixing dyes to produce a certain color at columns 3 and 4, but we do not find where Hermann expressly discloses printing multicolored images. At column 6, Hermann discloses digitizing a reference shade (singular) and correcting the reference shade. It may have been understood by one of ordinary skill in the art that the colors in Hermann were for use in a multicolored printing process, but Hermann does not disclose anything about the actual printing process. While it may have been trivially

obvious to one skilled in the art to apply the method in Hermann to computing colors for a multicolored image in a conventional process, since Hermann does not disclose printing multicolored images, Hermann does not anticipate the subject matter of claim 20.

Appellant argues that Hermann does not disclose a process including the step of printing a color atlas on a substrate comprising color charts composed of color fields by specifying volume of grid percentages of up to three printing inks (Br4). It is argued that Hermann discloses that it was known to use color atlases in general, but teaches away from using color atlases (Br4-5). It is further argued that Hermann does not disclose printing a color atlas with color field, the color of which is determined by up to three printing inks (Br5).

Hermann is directed to calculating colors to be used in color atlases (e.g., col. 6, lines 29-44). Thus, Hermann does not teach away. The colors are specified by the relative percentages of the three dyes (i.e., up to three dyes) and, hence, by the volumes of the three dyes. Claim 20 does not recite grid percentages. However, we

agree with Appellant that "Hermann is a color matching system, not a process for transferring or reproducing multicolored images on textile substrates" (Br8). Hermann describes color atlases, but does not describe that the color atlases are used as in claim 20.

Appellant argues that Hermann does not disclose dividing a multicolored printing original into image areas (Br5).

The Examiner responds that Hermann teaches, at column 5, lines 1-17, segmenting a given pattern into segments for correcting the form and color (EA10).

Hermann discloses recording a given shade and pattern electronically, displaying the color or form on a monitor and correcting it with respect to form and color (col. 5, lines 1-9). However, this does not require segmenting the pattern into image areas having different colors. The segmentation of the color space (e.g., col. 4, line 32) is not the same thing as segmentation of the image. Again, it may have been trivially obvious to divide the original into image areas as in conventional printing processes, but this

is not disclosed by Hermann. Thus, Hermann does not anticipate.

Appellant argues that Hermann does not disclose determining relative volumes for each printing ink to reproduce the color impression by comparing the color impression with the color atlas. It is argued that Hermann discloses (e.g., col. 5, lines 14-17) the desired ratio is obtained by means of a computer-controlled iteration method.

The Examiner states that "Hermann teaches determining the volumes which represent the ink concentration by using [sic] comparing the calibrating the data of dyes using an iteration method with a color atlas, which can be changed by changing a diskette or the input data (column[s] 5 and 6)" (EA11).

Hermann discloses determining the relative volume of dyes to match a reference color, but does not disclose determining a color impression by comparing an image area of the original to one of the color fields of the color atlas as recited in step (c). Again, this is because Hermann does not disclose the printing process. For this additional reason, Hermann does not anticipate.

Appellant argues that "Herman does not teach printing the original under the same printing conditions corresponding to [the] color field corresponding to the color impression" (Br5).

Of course, Appellant means to refer to printing an image of the original, not the original itself. Hermann discloses that "colour atlases are naturally only valid for as long as the basic dyes, the methods of application and and [sic] the substrates do not change" (col. 1, lines 39-41). This would have informed one of ordinary skill in the art, if such was not already well known, that the printing should be done under the same conditions (methods of application) as the color atlas in order to get the true colors shown in the color atlas.

For the reasons stated above, the Examiner's finding of anticipation is in error. The rejection of claim 20 is reversed.

Obviousness

Hermann

Appellant argues that Hermann is a color matching system, not a process for transferring or reproducing multicolored images on textile substrates. In particular, Appellant argues that step (f), "producing a copy of the multicolored image of the original by printing the area of the textile substrate corresponding to each image area of the original," is not suggested by Hermann (Br8).

The Examiner refers generally to columns 2 and 5 (FR6; EA6-7). However, we do not find any teaching of the printing process at these columns. Hermann is not directed to the printing process itself, but only to matching colors for use in color atlases and in printing.

Appellant argues that Hermann does not disclose or suggest the "same" printing conditions for the color atlas and the textile substrate onto which the image will be copied, which limitations are recited in step (f) of claims 20 and 21 (Br8).

The Examiner states (EA12): "This argument has not been considered, since [the] feature is not being claimed. It appear[s] that the printing original has the same printing conditions as the test substrate in step (a)."

Part of step (f) requires "printing the area of the textile substrate corresponding to each image area of the original . . . under printing conditions that are the same as the specified printing conditions of step (a) [printing a color atlas]." The step does not require the original to be printed under the same conditions as the color atlas, as asserted by the Examiner; this would not make any sense inasmuch as the original may be printed on any medium. Nevertheless, Hermann discloses that "colour atlases are naturally only valid for as long as the basic dyes, the methods of application and and [sic] the substrates do not change" (col. 1, lines 39-41), which would have taught one of ordinary skill that the substrate and method of application should be the same for the color atlas and the image to be reproduced.

Appellant argues that Hermann teaches away from the use of color atlases.

We disagree with Appellant for the reasons stated with respect to the anticipation rejection of claim 20.

Because Hermann does not disclose the printing process, in particular, steps (b) through (e) and part of step (f),

and because the Examiner has failed to cite any other evidence of obviousness, the Examiner fails to establish a prima facie case of obviousness. The rejection of claims 21-36 is reversed.

Phillips

Phillips discloses a kit for producing colored art work. The kit includes a color atlas of color reference tints (figure 5) where the color fields are identified by the colors (columns) and by the combination of percentage screens (rows) of colors printed on top of each other under specified printing conditions. The fields are printed with "specified volumes" of printing inks as recited in claim 20 and the "specified printing conditions using grid screen printing stencils having a specified grid percentage" as recited in claim 21, which are also indicated by the percentage screens and column numbers on the chart. It is noted that claims 20 and 21 only require that the color fields have "specified volumes" of printing inks and "inks printed one on top of the other under specified printing conditions using grid screen printing stencils having a

specified grid percentage," but do not require these volumes and percentages to be indicated on the color atlas.

The kit also includes larger preprinted tint sheets identifiable with individual reference tints and with exactly the same tone as the corresponding reference tint. Phillips discloses that the appearance of color printwork varies appreciably with the quality of the surface on which the colors are printed and, so, the color atlas is printed on different types of surface (col 5, line 64 to col. 6, line 2). Importantly, Phillips discloses that "the final colour printing is performed on the same selected surfaces as specified in the kit and using exactly the same specified printing parameters" (col. 3, lines 29-32). Therefore, Phillips teaches that the substrate for the color atlas and the image should be the same and that both the color atlas and the image should be printed under the same printing conditions.

The graphic artist selects the appropriate color atlas for the quality of paper to be printed (col. 6, lines 3-6). "Having identified the tints the artist then picks out corresponding sheets from the large preprinted tint sheets

provided in the kit and then in the normal way by use of scissors and glue builds up the initial color layout." (Col. 6, lines 8-12.) That is, the original is divided into image areas, as recited in step (b) of claims 20 and 21, as it is being built up. Note that the graphic artist may be building up the color layout using an original as a guide or the built-up layout itself may be the original. Because the artist builds up the color layout from tints, plural, this is a multicolored image. The artist determines a color impression for each image area, as recited in step (c) of claims 20 and 21, by using the appropriate tint.

Phillips then states (col. 6, lines 16-20): "After the initial art layout has been approved it is then handed to the colour printer with an identification of each of the colour tint zones derived from the reference numbers printed below the individual squares on the charts." This corresponds to step (d) of claims 20 and 21. Steps (e) and (f) of claims 20 and 21 are done inherently as part of the printing process. Remember that Phillips discloses that "the final colour printing is performed on the same selected surfaces as specified in the kit and using exactly the same

specified printing parameters" (col. 3, lines 29-32) and, therefore, teaches that both the color atlas and the image should be printed under the same printing conditions.

The difference between Phillips and the subject matter of claims 20 and 21 is that Phillips does not disclose printing on a textile substrate. The Examiner finds that Appellant's APA teaches, at pages 1-2 of the specification, that it was well known in the art to print multicolor images on a textile substrate using inks on top of each other and the Examiner concludes that it would have been obvious to one having ordinary skill in the art to use the process taught in Phillips to print on textile substrates (FR4; EA4-5).

We agree that the APA discloses that it was known to print on textile substrates and agree that this teaching would have motivated one of ordinary skill in the printing art to print on textile substrates using the procedure taught in Phillips. Appellant does not address the teachings of the APA.

Appellant argues that Phillips is devoid of any teaching of printing on textile substrates (Br6). It is

argued that the prior art in the field of printing on textile substrates is to use only one printing ink per separate area to be printed and that the Examiner has not cited a single reference suggesting that textile substrates may be printed using up to three inks on top of one another (Br6).

The rejection relies on the APA, which states that it was known to print on textile substrates using inks on top of one another, but that this procedure in most cases gives unsatisfactory results (specification, pp. 1-2). Appellant does not address the teaching of the APA in combination as applied in the rejection.

Appellant argues that Phillips does not suggest that the test surfaces and actual printed surfaces should be the same (Br6): "At best, Phillips suggests that the test charts should be printed on various types of paper, of which one surface may [have] characteristics similar to the desired printing surface."

We disagree. Phillips discloses that "the final colour printing is performed on the same selected surfaces as specified in said kit and using exactly the same specified

printing parameters" (col. 3, lines 29-32). Therefore, Phillips teaches that the substrate for the color atlas and the image should be the same. In addition, Phillips discloses that the "appearance of colour printwork varies appreciably with the quality of the surface on which the colors are printed" (col. 5, lines 64-66), which we consider to have been a well-known fact to those of ordinary skill in the printing art. One of ordinary skill in the art would have known to use a color atlas printed on a substrate identical to the actual printing surface in order to provide a final color appearance which identically matches the color in the color atlas.

Appellant argues that Phillips does not disclose a process in which a multicolored image is transferred or reproduced on a textile substrate and that the "printed areas" in claim 1 of Phillips, which is relied on by the Examiner, refers to individual fields of the color atlas, not a multicolored original image (Br6-7).

The Examiner points to claim 1 without addressing Appellant's argument (EA13). Nevertheless, it is clear from the description of the graphic artist building up a color

layout from selected tints (plural) (col. 6, lines 3-20), that a multicolor image is being produced using the kit in Phillips.

Appellant argues that there is no motivation for limiting the number of different printing inks that can be applied to a specific area to a maximum of three as recited in claims 20 and 22 (Br7).

That portion of the color atlas in Phillips which uses up to three inks (all columns except column 1) meets the claim limitation of up to three inks.

For the reasons stated above, the rejection of claims 20-22 is sustained. Claims 23, 29, and 30 are not separately argued and fall with claims 20 and 21. The rejection of claims 23, 29, and 30 is also sustained.

Appellant argues that the limitations of claims 24-26, 31, 34, and 35 are not disclosed by Phillips at column 3, lines 7-12, as relied on by the Examiner (Br7). Appellant argues that "[i]n the absence of any evidence, an Examiner's allegation of obviousness is improper" (Br7).

We do not find where the Examiner responds to these arguments. The statement of the rejection relies on

figure 5 and column 3, lines 7-12, as to claims 24, 25, 31, and 34 (FR4-6; EA5-6).

In our opinion, the limitation that "the color field is defined according to a color measuring system as color value data," as recited in claims 24 and 31, is broad enough to read on the specification of the colors and the combination of percentage screens for each color (Phillips, col. 4, line 46 to col. 5, line 4). The limitation that "the color measuring system measures color density values," as recited in claims 25 and 34, is broad enough to read on the combination of percentage screens in the color atlas (col. 4, line 64 to col. 5, line 4) because the percentage screens indicate color density values. Thus, we sustain the rejection of claims 24, 25, 31, and 34. Claims 27 and 28, which depend directly or indirectly on claim 24, have not been separately argued and fall with claim 24. Claims 32, 33, and 36, which depend directly or indirectly on claim 31, have not been separately argued and fall with claim 31.

In regard to claims 26 and 35, the Examiner concluded that it would have been obvious to use either the CIE-LAB or CIE-LUV color coordinate system (FR5-6; EA5-6). We agree

with Appellant that no evidence is cited to support the Examiner's bare conclusion. Phillips specifies the color value data in terms of the printing ink colors involved and the percentage screens, not a color coordinate system. Thus, there is no motivation to apply a known CIE-LAB or CIE-LUV color coordinate system to Phillips. Although Hermann discloses that the color fields of the color atlas are defined by a color measuring system in terms of color coordinates a* and b* in the known CIELab color coordinate system (col. 2, lines 31-32, 65-67), Hermann is not part of the stated rejection over Phillips and the APA. Thus, the rejection of claims 26 and 35 is reversed.

CONCLUSION

The rejections of claims 20-36 over Hermann are reversed.

The rejection of claims 20-25, 27-34, and 36 over Phillips and the APA is sustained. The rejection of claims 26 and 35 over Phillips and the APA is reversed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

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